



MISSISSIPPI STATE UNIVERSITY
— JAMES WORTH —
BAGLEY
COLLEGE OF ENGINEERING

DAYE C. SWALM SCHOOL OF
CHEMICAL ENGINEERING

**SPECIAL
POINTS OF
INTEREST:**

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- Study Abroad in Iceland

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Alumni Spotlight

By: Hannah Leutermann

I like to start my day by counting submarines. Today, there are two tied to the pier and one has recently pulled into the dry dock. As the Design Division Manager of the first in class, next generation, ballistic missile submarine, my team and I are responsible for oversight of the ship design. Like the ship, the design itself is a technological marvel, and I am the one accountable to ensure that this system will enable the US Navy to continue building and maintaining these submarines for the next 80 years. I think back to all of the jobs that I have had leading me to now: from chemical plant emissions calculations, to substitute teacher and yoga instructor, to submarine hull coat-

ings engineer, to my most recent role designing and scaling up the facility to produce the COVID-19 vaccine for Operation Warp Speed...and it all started with ChemCAD.

After graduating from Mississippi State, my experience with ChemCAD was something that set me apart from other new hires and sprung me into a position with a focus on process simulations. I married an active-duty naval officer a few years later, and began the adventure of leveraging and growing my knowledge base through jobs in four different states in eight years. My degree gave me an



unparalleled tenacity I believe can only come from making it through ChemE. But beyond that, it showed me the value of having someone in your corner when things get rough. Because of the support I received from my professors and fellow engineers, I knew I wanted to be that support to other people and to use my engineering skills for public service.

My path as an engineer has meandered far outside what my 18-year-old-self expected, but regardless, I've always focused on the goal of supporting others and service. If I could give a piece of advice to myself as an undergrad, I would say that while classes, good grades, and accolades are important, they do not matter nearly as much as internalizing the problem-solving processes chemical engineering uses and being a reliable friend and coworker that helps those around them to realize their own dreams and greatest potential.

Students Prepare for Career Expo

By: Caitlin Wesson

This fall, Mississippi State University once again hosted its Fall Career Expo Days, which consisted of two in-person days and one virtual day held on September 28, 29, and 30, 2021. Among the three days, over 200 companies attended, which offered students numerous opportunities to pursue job opportunities.

To prepare for career fair, AIChE hosted various activities to help students be as equipped as possible. Early in the fall semester, a Resume Workshop was co-hosted with OXE; a Headshot Session was held on the front steps of Swalm Hall for students to gain professional photos; and lastly, AIChE hosted information sessions for three companies: International Paper, Chevron, and Proctor & Gamble.

Overall, the Fall Career Expo Days were successful for the chemical engineering students, with many earning co-ops/internships and full-time jobs as a result. If you have ideas on how to help students prepare for future Career Expo Days, email us at

aiche.msstate@gmail.com.



Undergraduate Research Highlight

By: Katelyn Woodard

One of the most vital stages of research is being able to effectively communicate to a variety of professionals, both within and outside the field of study. It is a skill that requires a significant amount of practice for most people, myself included. There is a limited number of opportunities for undergraduate students to present their research. Fortunately, the Shackouls Honors College hosts the Summer 2021 Research Symposium that allows undergraduate researchers to highlight their work and network with other students and faculty. I was lucky enough to participate, presenting the research I had been working on full-time since May 2021.

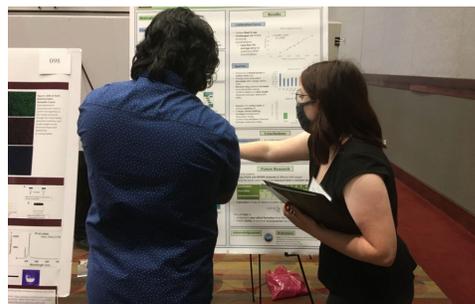
To participate in the event, I needed to create a poster to present my research. I originally expected this stage of the process to be one of the easier ones, but I underestimated how intimidating it could be to describe research in a neat, cohesive story. To

be able to summarize months of research, procedures, and varying projects into a single poster, that is both understandable and visually pleasing, is a skill that I did not realize I was lacking until I had to do it. With the help of my research advisor, **Dr. Julie Jessop**, I was able to construct a thorough storyline that made the data make sense to anyone who may read the poster. By the time I had finished constructing the poster, I both had a better understanding of my accomplishments and was significantly more comfortable constructing visual tables and graphs and prioritizing the relevance of information.

On the day of the Research Symposium itself, I was incredibly excited to be surrounded by other student researchers, especially after a summer of working alone, and the energy in the presentation room was invigorating. Before the official judges began to interview students, we all talked to one another and practiced presenting. It was so fun to just get a hint at how much

research goes on at MSU, even over one summer. The process of presenting to my three judges was far less intimidating, especially since they asked questions for the sake of clarification and learning, rather than out of a grading necessity. The professors and graduate students volunteering as judges truly reflected the quality and earnestness for the blending of education and practical skills at MSU.

I was ecstatic to place 3rd in this Research Symposium in the Physical Sciences & Engineering category, but even if I had not have placed, participating would have been a wonderful and valuable experience. I am looking forward to participating in future Research Symposia as I update my research progress and improve my technical communication skills.



AICHe Gives Back

By: Caitlin Wesson

During the fall 2021 semester, MSU AICHe held several opportunities that allowed chemical engineering students to give back to their campus and community.

On Saturday, September 18, 2021, AICHe brought back their annual Swalm Cleanup Day, where more than 30 students participated. Headed up by **Jacob Fisher**, participants helped to paint the walls of the Swalm Student Lounge (photo below) and to prepare the fourth floor of



Swalm Hall for its major renovation. This event served as a great networking opportunity to meet more people within this major and a way to give back to our building that we spend so much time of our time in.



During the semester, AICHe also worked with the Skate Odyssey After School Program to present STEM experiments. The event was held on the afternoon of Monday, October 25, 2021 and was organized by **Catherine Boltz**.

Volunteers from both AICHe and MSU OXE were able to share their love of STEM with more than 140 elementary school campers (photo above),

who rotated through three experiments and demos. Program Director **Harley Middleton** commented, "All the parents have been messaging me and saying [their camper] had the best time!"

Another event hosted by AICHe this semester was the Fall Engineering Bowl, held on the afternoon of Saturday, October 23, 2021. Organized by **Nathan Mitchell**, teams from various engineering majors participated in a trivia style tournament (photo below). Categories included STEM topics, pop culture, and sports, and prizes were given to the top teams!



Conference Highlight

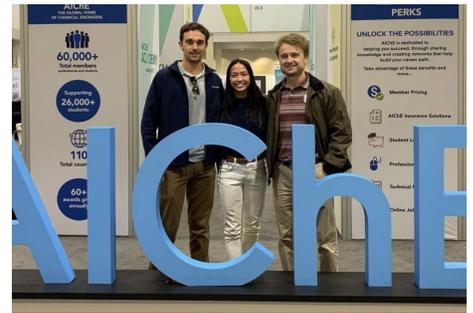
By: Meghan Nguyen

At the Annual Student Conference, Alaina Levine presented “What Should I Do With My Life? Strategies to Create Your Unicorn Career.” After obtaining a ChE degree, knowing your exact career path can be intimidating. However, the first step is understanding your career options (which may or



may not exist yet!) and eventually build your own “unicorn career.” A unicorn career is your career based on your individual initiation, crafted with your own ideas or network of people. One thing to keep in mind is that you should ultimately have a career that respects and values you for YOU. Initially, optimism plays a key role in manifesting what you want, so start with a celebratory experience regardless of the reason. Start positive and eventually end positive. During the process, there is a never-ending loop of feed-

back, incorporating joy and creativity. To have creativity, you need joy, but to have joy, you need to have a creative drive—hence never-ending loop. With in a unicorn career, there will be temptation to listen to negativity, but the reality is that You are the one living Your career in a 5-dimensional universe. The best person to understand who, what, when, where, why in your career is up to you. Best said by Jesse Jackson, “today’s student...must know it is NOT their aptitude but their attitude that will determine their altitude.”



Co-op Highlight

By: Kimmie Shiyou

I am currently in the third term of my co-op as a Process Improvement Engineer with Tronox, LLC. Tronox, located in Hamilton, MS, produces titanium dioxide (pigment), which is sold to paint manufacturers such as Sherwin Williams.

My journey to receiving this co-op was very well-timed, since it was right in the middle of the pandemic, and I was worried that no companies would be hiring. Shortly after quarantine began, the Co-Op office sent out an email stating that Tronox was offering interviews for a Summer 2020 co-op position, and I decided to sign up. After practicing my interview skills, preparing a few thoughtful questions, and having my resume reviewed, I knew I was ready. A few days later, I received an offer, and in May of 2020, I started my first semester of co-op as a Process Improvement Engineer.

The first week was quite a transition with learning my way around

an industrial plant and numerous office buildings. However, the biggest transition was learning process controls, which is the focus of my position as a process improvement engineer. I had not yet taken any programming or controls classes to prepare me for the role, so I immediately began shadowing the control engineers. I am very thankful for these engineers because they quite literally taught me everything I know about Foxboro DCS, Allen Bradley PLC, and other programs.

Despite this, I did find myself using information from classes like Mass & Energy and Fluids to help me with different projects along the way. My first two semesters focused mainly on Software Change Proposals and ways to improve our DCS graphics. Currently, I have transitioned into doing more capital projects along with



my process control tasks, like equipment upgrades or replacements. I also help other coworkers with their projects by analyzing data or even showing them what can be done from a process control aspect.

The more difficult aspect of my co-op is learning new things under time-strenuous conditions that I had not previously had experience with. It is always important to me that I get the best possible final product of my projects done on time. With that said, the most enjoyable aspect of my co-op is the rewarding feeling of knowing my work performed well and helped improve Tronox’s process.

I feel my co-op will allow me to better understand what I am learning in the classroom since I have experienced it in industry. There is no better learning experience than getting to work and applying what I learn in a real way. I am sad to be finishing up my third term here at Tronox, but I am excited for what opportunities may be ahead in the future thanks to all of the useful information I learned as a co-op here.

Congratulations to our Fall 2021 ChE Graduates!



Lindsay Charlton ★Ω

Chloe Cole ★Ω

Nancy Usey ★

★ = AY2021-2022 AIChE member

Ω = Omega Chi Epsilon member



Study Abroad in Iceland

By: Lucie LeBlanc

Where do I even begin? Studying abroad in Iceland was the best experience I have ever had! Iceland is the only country that I have visited outside of the United States. I traveled the whole country during May 2021, studying Alternative Energy. Iceland has close to zero pollutants in the whole country and has eco-friendly alternatives, plus terrain complete with a fairytale appearance. My study abroad team included two faculty members, **Dr. Todd** and **Dr. Deb Misna**, 13 other students, and our guide, Hilmar. We met each other as strangers, but now, I consider these people to be my good friends.

I learned about this opportunity by reaching out to MSU's Study Abroad Center. I was added to their weekly emails with reminders of different programs. Traveling to Iceland was not my first choice. I initially wanted to travel to other



European countries; however, those travel plans did not pan out as I had hoped due to the COVID-19 pandemic. I almost decided to not travel at all, until I came across the Alternative Energy program. I signed up, but we did not know we were approved to go until a month before we were scheduled to leave.

Iceland is a small country with roughly 350,000 residents living on a country of 40,000 square miles. For reference, this country is less than a quarter of the size of Texas. However, Iceland contains some of the most beautiful scenery in the whole world. From the stony beaches to the tips of mountains, the ice caves of glaciers, and the views of volcanoes, Iceland contains a story-land scenery. The only thing missing is a dragon flying over the country! My group and I traveled to all these places, tasting the delicious foods (and not-so-delicious foods) along the way. We tried shark, whale, horse, and puffin, and I surprisingly enjoyed the horse! Additionally, we saw how this small

country is able to create zero pollution by heating their streets using the lava cavities under the country. Through heat exchangers, the steam from the lava is used to heat their water and streets. This is essential since Iceland experiences yearly snowfall, and they must keep utilities warm.

I am thankful for my study abroad experience, and I will cherish it forever. I swam in a warm lagoon during snowfall, witnessed an active volcano, climbed a glacier, ate the world's finest tomato soup, and so much more. Each experience taught me something new, but I valued expanding my mindset and values. I learned so much just from the people I traveled with plus the surplus of knowledge from the natives. I am now close friends with the people I traveled with, and I see them often. I hope to return to Iceland again and continue to explore the numerous marvels of nature once more.



Thank you to everyone who took the time to contribute to making our newsletter a success! Be on the lookout for our next issue, expected in Spring 2022. — Caitlin Wesson, AIChE Newsletter Editor